

**Notice of Allowability**

Application No.

10/022,118

Examiner

Rabon Sergent

Applicant(s)

COTE' ET AL.

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to telephonic interview of December 6, 2004.
2. ☒ The allowed claim(s) is/are 1-6,8-13 and 16-27.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 120604.
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

  
**RABON SERGENT**  
**PRIMARY EXAMINER**

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An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Kent Kokko on December 6, 2004.

The claims have been amended as follows:

1. (Currently amended) A chemical composition comprising:
  - (a) a first component comprising one or more fluorochemical urethane compounds comprising the reaction product of:
    - (1) one or more polyfunctional isocyanate compounds;
    - (2) one or more hydrophilic polyoxyalkylene compounds;
    - (3) one or more silane compounds of the formula:
$$X-R^1-Si-(Y)_3$$
wherein  
X is  $-NH_2$ ;  $-SH$ ;  $-OH$ ;  $-N=C=O$ ; or  $-NRH$  where R is selected from the group consisting of phenyl, straight and branched aliphatic, alicyclic, and aliphatic ester groups;  $R^1$  is an alkylene, heteroalkylene, aralkylene, or heteroaralkylene group; and each Y is independently a hydroxyl; a hydrolyzable moiety selected from the group consisting of alkoxy, acyloxy, heteroalkoxy, heteroacyloxy, halo, and oxime; or a non-hydrolyzable moiety selected from the group consisting of phenyl, alicyclic, straight-chain aliphatic, and branched-chain aliphatic, wherein at least one Y is a hydrolyzable moiety; and
  - (4) one or more fluorochemical monofunctional compound; and
- (b) a second component comprising one or more hydrophilic auxiliary compounds capable of further improving the oil- and/or water repellency or soil/stain release properties of a fibrous substrate treated with the fluorochemical urethane compounds;

wherein said auxiliary compounds of said second component are selected from the group consisting of:

- i) the reaction product of a polyisocyanate, a blocking agent and a polyoxalkylene compound,
- ii) hydrophilic carbodiimides, and
- iii) hydrophilic polymers of acrylic and/or methacrylic acid.

2. (Original) The chemical composition of claim 1 wherein the polyfunctional isocyanate compound of said first component is a diisocyanate or trisocyanate.

3. (Original) The chemical composition of claim 1 wherein the fluorochemical monofunctional compound of said first component is of the formula:



wherein:

$R_f$  is a perfluoroalkyl group or a perfluoroheteroalkyl group;

Z is a connecting group selected from a covalent bond, a sulfonamido group, a carboxamido group, a carboxyl group, or a sulfonyl group; and

$R^2$  is a divalent straight or branched chain alkylene, cycloalkylene, or heteroalkylene group of 1 to 14 carbon atoms; and

X is  $-NH_2$ ;  $-SH$ ;  $-OH$ ;  $-N=C=O$ ; or  $-NRH$  where R is selected from the group consisting of phenyl, straight and branched aliphatic, alicyclic, and aliphatic ester groups;  $R^1$  is an alkylene, heteroalkylene, aralkylene, or heteroaralkylene group.

4. (Original) The chemical composition of claim 3 wherein  $R_f$  is a perfluoroalkyl group of 2 to 12 carbons.

5. (Original) The chemical composition of claim 3 wherein  $R_f$  is a perfluoroalkyl group of 3 to 5 carbons.

6. (Previously presented) The composition of claim 1 wherein said first component polyoxyalkylene compounds are homopolymers of polyoxyethylene and copolymers of polyoxyethylene and polyoxypropylene.
7. (Cancelled)
8. (Currently amended) The composition of claim 1 wherein the said isocyanate groups of said auxiliary compounds are blocked isocyanate groups.
9. (Previously presented) The composition of claim 8 wherein said blocked isocyanate groups are prepared by a thermally reversible reaction with phenols, lactams, or oximes.
10. (Currently amended) The composition of claim 1 ~~7~~ wherein said polyoxyalkylene compounds of said second component are homopolymers of polyoxyethylene and copolymers of polyoxyethylene and polyoxypropylene or polyoxytetramethylene.
11. (Currently amended) The composition of claim 1 wherein the amount of said hydrophilic polyoxyalkylene compounds of said first component is sufficient to react with between 0.1 and 30% of available isocyanate groups, the amount of said silane compounds is sufficient to react with between 0.1 and 25 mole % of available isocyanate groups, and the amount of said fluorochemical monofunctional compounds is sufficient to react with between 60 and 90% of available isocyanate groups, wherein said isocyanate group are of said first component polyfunctional isocyanate compounds.
12. (Currently amended) The composition of claim 1 ~~7~~ wherein the amount of said polyoxyalkylene compound of said second component is such that from about 25 to about 75 % of the available isocyanate groups of said auxiliary compound are reacted.

13. (Original) The composition of claim 12 wherein the unreacted isocyanate groups are blocked isocyanate groups.
14. (Cancelled)
15. (Cancelled)
16. (Original) The composition of claim 1 wherein said polyoxyalkylene compound of said first component has a functionality of greater than 1.
17. (Currently amended) The composition of claim 17 wherein said polyoxyalkylene compound of said second component has a functionality of one.
18. (Original) A treatment composition comprising a solution of the chemical composition of claim 1 and a solvent.
19. (Original) The treatment composition of claim 18 wherein the solvent is selected from the group consisting of water, an organic solvent, and mixtures thereof.
20. (Previously presented) The treatment composition of claim 18 comprising from about 0.1 to about 50 weight percent chemical composition.
21. (Original) An article comprising a substrate having a cured coating derived from at least one solvent and a chemical composition of claim 1.
22. (Original) The article of claim 21 wherein said substrate is a fibrous substrate.

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23. (Original) A method for imparting stain-release characteristics to a substrate comprising the steps of applying the treatment composition of claim 1, and allowing the coating composition to cure.
24. (Original) The method of claim 23 wherein said substrate is a fibrous substrate
25. (Previously presented) The method of claim 24 wherein said coating composition is applied in an amount sufficient to provide between 0.05% and 5% by weight solids on fiber.
26. (Original) The method of claim 24 wherein said composition is cured at ambient temperature.
27. (Previously presented) A method for imparting stain-release characteristics to a fibrous substrate comprising the steps of:
- (a) applying a treatment composition of claim 18, and.
  - (b) curing the coating composition at elevated temperature to deblock said blocked isocyanate groups.
28. (Cancelled)

Any inquiry concerning this communication should be directed to R. Sergent at telephone number (571) 272-1079.

R. Sergent  
December 6, 2004

  
RABON SERGENT  
PRIMARY EXAMINER